

Jan. 7, 1969

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3,420,399

LID RETAINING CLIP FOR EARED CONTAINERS

Filed Sept. 20, 1967

Sheet 1 of 2

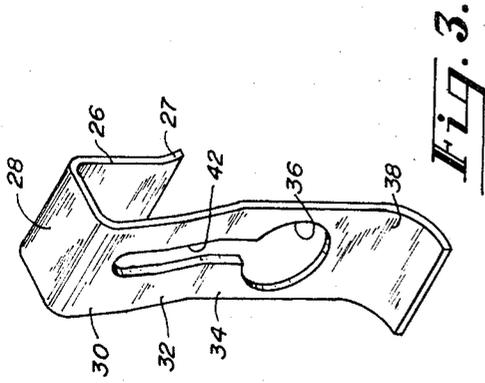


Fig. 3.

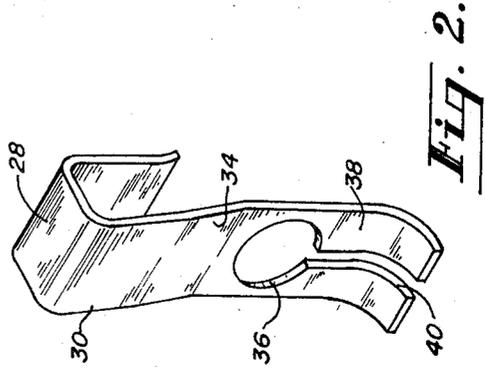


Fig. 2.

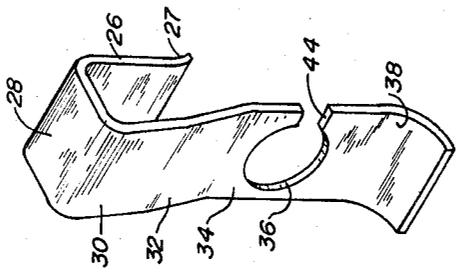


Fig. 4.

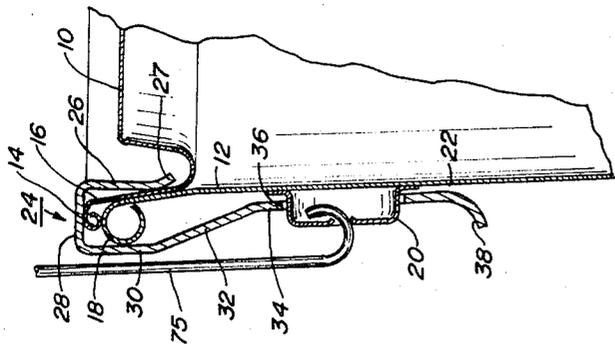


Fig. 1.

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Sheet 2 of 2

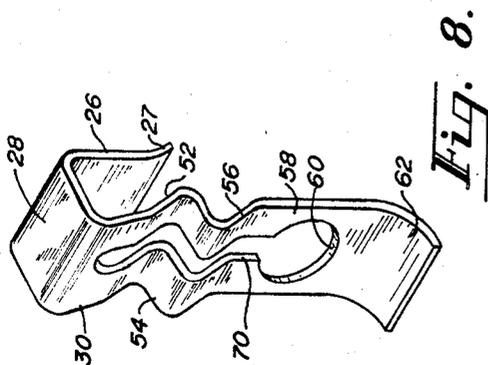


Fig. 8.

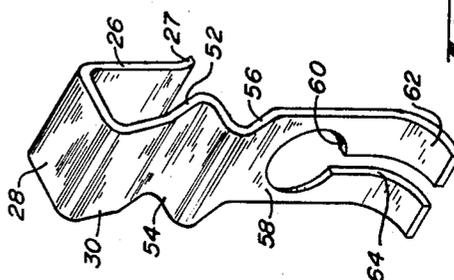


Fig. 7.

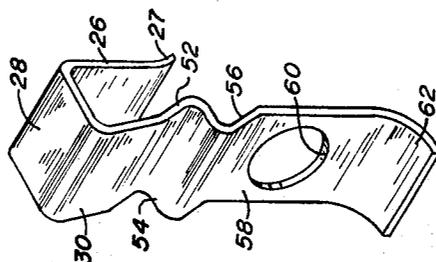


Fig. 6.

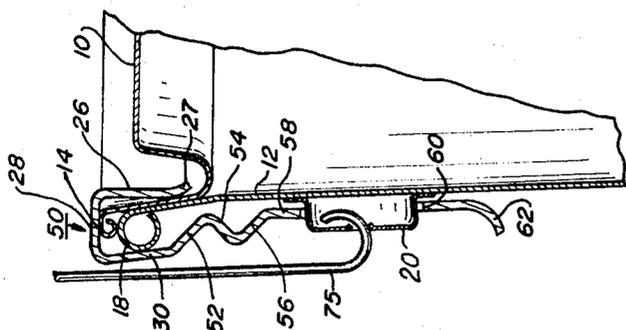


Fig. 5.

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LID RETAINING CLIP FOR EARED CONTAINERS
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14 Claims

ABSTRACT OF THE DISCLOSURE

A lid retaining clip for use with eared containers. The clip is shaped so as to simultaneously engage a groove in the inserted lid and mating container with the clip having a depending tab having an aperture therein. The aperture is positioned so as to engage and be releasably retained on the ear of the eared container.

BACKGROUND OF THE INVENTION

Field of the invention.—The field of art to which this invention pertains is in the general class of bottles and jars and in particular to the subclasses of “fasteners”; “fasteners, clamp”; and “fasteners, spring.” Another field of art to which this invention may pertain is in the general class of metallic receptacles and in particular to the subclasses of “fastening devices” and to “fastening devices, snapping.”

Description of the prior art.—In the art of sealing tapered containers, it has been customary heretofore to provide lids adapted to nest tightly within the open top of a container and in certain circumstances small tabs either as a portion of the lid or as separate attaching clips have been adapted to engage the upper O-rim of the container and also the upstanding edge portion of the lid so as to hold the lid in position while the container is shipped or is otherwise disposed of. Prior to this invention insofar as is known, there has been no reusable and remountable clip retainer for eared containers which is adapted to engage the lid of a can and at the same time engage the outer upper rim of the container and the ear of the container. The clip retainer of this invention has a tab extending downwardly and with an aperture precisely disposed in the tab so that when mounted the aperture engages the outer periphery of an ear of an eared container and uses the engagement of the ear to provide the retaining pressure on the lid of the container.

The retaining tab of the clip provides a manipulating level whereby the retaining clip which may be readily removed or replaced at the option of the user, absent the requirement of a prying means such as a screwdriver and the like.

SUMMARY OF THE INVENTION

In the embodiments shown in this invention and to be hereinafter more fully described, it is contemplated that a pair of metallic clips preferably formed of a strip of sheet metal are shaped so as to precisely engage the upper surface of the convolution provided by a friction top closure of a replaceable lid sized to fit within an open top of a container. As it engages the lid, the clip at the same time engages the outer rolled rim of the container in a manner so that the depending portion of the clip is biased toward the side wall of the container. This depending portion of the strip is formed to lie adjacent the wall of the container. The depending portion has an aperture formed therein, the aperture sized and positioned so as to engage and be retained by a bail ear of an eared container when the clip is mounted on the container. In particular, the bail ears of these containers are anticipated to be precisely spaced from the upper rolled edge of the container so that upon the fitting of a lid into this con-

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tainer opening, a pair of retaining clips may be mounted to snugly engage the lid and the outer roll rim of the container. Each clip is mounted with the depending tab portion of the clip having its aperture adapted to snugly engage the bail ear as it lies adjacent the container. The distal end portion of the clip that extends below the bail ear is formed so that it may be readily grasped by the fingers of the user and by simple manipulation and pulling the clip is removed from the ear and lifted from in the way of the container and lid so as to permit ready removal of the lid from the container. When in the mounted position, the depending tab of the clip is frictionally engaged upon the bail ear to prevent unwanted or accidental dislodgment of the clip. The retaining of the lid in the container is by oppositely disposed clips engaging opposite portions of the lid and mating portions of the ends of the container.

It is an object therefore of this invention to provide a pair of retaining clips, each clip adapted to engage the friction top closure portion of the lid of a container when it is fitted within the open end of the container, the clip having one end shaped to engage the lid and the upper roll rim edge of the container and when so mounted the depending portion of the clip is adapted to lay adjacent the side wall of the container. This depending portion has an aperture formed therein with said aperture adapted to frictionally engage one of the bail ears of an eared container so that the clip is maintained in a predetermined retaining position.

INTENT OF THE DISCLOSURE

Although the following disclosure offer for public dissemination is detailed to insure adequacy and aid in understanding of the invention, this is not intended to prejudice that purpose of a patent which is to cover each new inventive concept therein no matter how it may later be disguised by variations in form or additions of further improvements. The claims at the end hereof are intended as the chief aid toward this purpose, as it is these claims that meet the requirement of pointing out those improvements in the lid retaining clip for an eared container in which this inventive concept is found.

There has been outlined rather broadly the most important features of the lid retaining clip for an eared container of this invention in order that the present contribution to the art may be more fully appreciated. There has been chosen two specific embodiments for the purpose of description of the invention and these embodiments have variations therein which are shown in the accompanying drawings forming a part of the specification wherein:

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 represents a partially fragmentary sectional view of an eared container showing somewhat diagrammatically a lid retaining clip by which means a lid having a friction top closure is retained within a rolled top tapered container having ears thereon, the lid retaining clip being shown in the retaining position;

FIG. 2 represents an isometric view showing one embodiment of the lid retaining clip of FIG. 1;

FIG. 3 represents an isometric view of an alternate construction of the lid retaining clip of FIG. 1;

FIG. 4 represents an isometric view of yet another alternate construction of the lid retaining clip of FIG. 1;

FIG. 5 represents a fragmentary sectional view showing yet another embodiment of a lid retaining clip similar to the lid retaining clip of FIG. 1 but with a biased adjusting means formed in the depending portion of the lid retaining clip;

FIG. 6 represents an isometric view of a lid retaining clip formed in the manner shown in FIG. 5;

FIG. 7 represents an isometric view of an alternate construction of the lid retaining clip of FIG. 5, and

FIG. 8 represents an isometric view of yet another alternate construction of the lid retaining clip of FIG. 5.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to the drawings in which like numbers represent like members or member portions throughout the several figures, there is shown in FIGS. 1 through 4 a lid retaining clip of this invention which is formed primarily and preferably of a strip of metal which may be of sheet steel of approximately one inch in width and approximately twenty or twenty-five thousandths of an inch in thickness. This strip is bent into a precise configuration so that one end is adapted to engage and retain a lid closure when mounted in and within the upper open rolled edge opening of an eared container. As shown in FIG. 1, a lid closure 10 has a friction top closure providing an outer shoulder formed to mate within the open top of a container 12. This lid 10 has its outer rim bent into a rolled edge 14 with the depending portion 16 adjacent thereto adapted to snugly engage and fit as a friction top closure the open upper end of the tapered container 12.

The container 12 may be formed in a conventional manner and, as exemplified, has an outer rolled edge 18 which is formed to provide a safe edge for the open end of the container and also provides a strengthening shoulder for the container so that the lid 10 may be pried from the container opening. Attached to the side of the container and at a predetermined distance down from the top open end is a bail ear 20 which may be attached as by welding, soldering or any other conventional manner. A like ear is attached to the container side wall 22 with said second ear being disposed on the diametrically opposite side of the container to the shown ear. After filling the container 12 and applying of the lid 10 thereto, a lid retaining clip generally indicated 24 is attached as shown to the assembled container and lid so as to retain the lid within the open top of the container.

This lid retaining clip 24 consists of a downwardly depending inward end portion 26 which has its inward end 27 curved to allow easy insertion into the groove of the lid. The lid retaining clip extends from end portion 26 to a transverse or outwardly directed portion 28 of determined length which is sized for a particular lid and container assembly. From transverse portion 28 the clip is bent at substantially right angles or a little bit more than a right angle and toward the inner depending portion 26. This first outer depending portion being identified as 30 is bent inwardly so that the retaining clip has the clip portion between leg 26 and end 27 engaging the inner surface of the lid 10, and the inner edge of the clip portion 30 engaging the roll rim 18. These engaging portions are in biased engagement with the lid and container by the bending formation of the clip.

From the leg portion 30 of the clip a downwardly and inwardly extending leg portion 32 is formed and continues downwardly until it is bent to form a wall engaging leg portion 34 within which an aperture 36 is formed. This aperture is sized so as to frictionally engage the ear 20 when the lid retaining clip is placed over the assembled lid and container. A terminal curved tail portion 38 is adapted to lay close to the flange of the ear 20 with the extreme distal end of the clip being curved outward for ready grasping by the user of the container.

Referring now in particular to FIG. 2, it is to be noted that the aperture 36 formed in the leg portion 34 has extending from its downward portion and through the leg and tab portion 38 a slot 40 which is of a determined width for a purpose to be hereinafter described.

Referring next to FIG. 3, it is to be noted that in leg portion 34 and in aperture 36 there is formed a closed slot 42 which extends upwardly from aperture 36 and through leg portion 34, leg portion 32 and part way into

the leg portion 30. This closed slot 42 is provided for purposes to be hereinafter more fully described.

Referring now to FIG. 4, it is to be noted that extending from the aperture 36 and transversely to the length of the tab 38 there is formed an enlarged notch 44 which extends from the aperture 36 to and through the side of the leg portion 34 so as to provide an opening of determined width in the side of the lid retaining clip.

Referring now in particular to FIG. 5, there is shown an alternate form of a lid retaining clip which is similar to the clip of FIG. 1. This clip of FIG. 5 is identified as 50 and in the manner of FIG. 1 is adapted to engage lid 10, the outer rolled edge 14, the upper rolled rim 18 of the container 12 and engage the ear 20. The inner end of this lid retaining clip 50 is identified as 27, the inner leg as 26, the upper cross or transverse leg as 28 and a first depending leg portion as 30. However, it is to be noted that below the leg portion 30 the clip 50 has an accordion shaped fold including a first inward and downwardly directed panel 52. This panel terminates at and is bent outwardly as panel portion 54. This panel terminates at and is thence inwardly bent again as panel 56. This panel terminates at and is bent to form a straight leg portion 58 within which is formed an aperture 60, the downward or terminal end of this leg portion is bent into an outward curved tab 62.

Referring next to FIG. 6, it is to be noted that in panel portion 58, aperture 60 is made a predetermined size and is positioned substantially midway of the parallel side walls of the panel portion 58.

Referring next to FIG. 7, it is to be noted that in this embodiment the aperture 60 in panel 58 has its lower portion terminating with a slot 64 which extends through the panel portion 58 and the tab portion 62. This slot is made of a determined width providing a guideway for a bail from the aperture 60 to and through the depending portion of the tab 62.

Referring finally to FIG. 8, it is to be noted that in this embodiment the aperture 60 has extending upwardly therefrom a slot 70 which continues through the various leg portions 52, 54 and 56 and into the leg portion 30. This slot 70 is of a determined width and length and its purpose is more fully described below.

USE AND OPERATION

Referring particularly to the use and operation of the lid retaining clip shown in FIGS. 1 through 4, it is to be noted that after the assembly of the lid to the container, the lid retaining clip 24 is mounted upon the container. When mounted in a retaining position, the leg portions 26 and 30 of the clip tightly engage the inner edge of the lid 10 and the outer rolled rim 18 of the container 12 so as to grasp the assembled lid and container. In its retaining position the lower portion of the lid retaining clip engages or lies against the side wall of the container. After the clip is mounted, a wire bail 75 may be inserted into the bail ear 20 so that the eared container may be transported in the usual manner.

It is to be noted that the aperture 36 may be sized to be a snug or friction fit on the ear 20. When the aperture is made a snug fit the portion around the aperture 36 is made to act as a spring. The lid retaining clip of FIG. 2 has the slot 40 of a determined length and the aperture 36 is a slightly undersize snug fit with the ear 20. When the lid retaining clip is pushed into position on the ear, a slight spring action is applied to the aperture opening engaging the ear. It is to be noted that the slot 40 is also of sufficient width so that as the lid clip is pried outwardly the slot 40 will pass by the bail 75 and allow the lid retaining clip of FIG. 2 to be readily removed from the container. When it is desired to again retain the lid, the lid is pushed tightly into the container, after which the upper portion of the lid retaining clip is pressed downwardly over the assembled lid and container. The slot 40 is positioned to straddle and pass the bail 75 and then the depending portion of the clip

is brought toward the container wall until the aperture 36 is caused to be brought in the way of and engage the ear to once again snugly retain the lid in the opening of the container.

In FIG. 3, the slot 42 is adapted to provide a spring action to the aperture 36 in the manner of the slotted apertures of FIG. 2. When desired the slot 42, of course, can be continued to any desired length including all the way to and through the inward tip 27. However, this is usually not necessary as in most applications it is only desirable to make the aperture 36 a slightly snug spring-like fit on the ear 20. The lid retaining clip of FIG. 3 is contemplated to remain upon the bail 75 during the use of the container. The slot 42 and aperture 36 sliding on the bail in a free manner is movable thereon so that the unengaged retaining clip may be moved to any desired position on the bail.

Referring now to the clip of FIG. 4, it is to be noted that upon removing of the lid retaining clip from the ear 20 that aperture 44 is of sufficient width to allow the lid clip to slide by the bail 75. In addition to ready removal from the bail, the aperture 36 and the slot 44 is so sized that a sensing device may be used in the applying of the bail to the bail ear. This sensing device may be adapted to engage the side of the ear adjacent the container, with this sensing device being adapted to enter the side slot 44 of the lid retaining clip of FIG. 4.

In the use and operation of the lid retaining clip of FIGS. 5 through 8, it is to be noted that the midleg portion of this lid clip 50 as seen in FIG. 5 is adapted to act as a tensioning device to accommodate inaccuracies of locating or attaching of the ear 20 to the container 12. When the upper portion of the lid retaining clip has the legs 26 and 30 engaging the rolled rim of the container and the inner portion of the lid 10, the mounted lid retaining clip is contemplated to be slightly shorter in its depending portion so that the aperture 60 is a slight mismatch with the position of the ear 20. The aperture 60, when brought in the way of the ear 20, is cammed downwardly on the curve of the ear and as the lid retaining clip is forced inwardly the lid retaining clip is brought to a condition of a predetermined tension. In this manner the aperture 60 need not be a precise snug fit upon the ear 20 but may be a loose sliding fit size-wise as long as the position of the aperture is such that upon the mounting of the lid retaining clip upon the assembled lid and container the aperture must be cammed on to the ear 20. As the accordion portion as indicated in portions 52, 54 and 56 of the lid retaining clip are caused to be deflected from the formed angle, the deflection causes a determined bias or tensioning to be provided to the lid retaining clip.

It is to be noted in FIG. 6 that the aperture 60 has no relieving slot, and in this particular embodiment the aperture 60 is a sliding fit upon the ear 20; however, the placement of the aperture is such that the aperture as it is mounted on the ear is cammed into position. The cam action onto ear 20 causes the lid retaining clip to be brought into tension as it is brought in the way of the ear and is moved toward the container wall.

Referring next to FIG. 7, it is to be noted that the slot 64 is of a width sufficient to permit the removal of the lid retaining clip from the bail 75 after the clip has been removed from the ear. In FIG. 8 the slot 70 is of sufficient width to allow the clip to be removed from the ear and onto the bail 75. Particularly, the slot 70 permits the ready outward swinging of the lid retaining clip preparatory to the ready removal of the clip from the lid and the container.

It is, of course, obvious that, where desired, the lid retaining clip of this invention can be used with a regular container having a single, double, or even triple tight lid. It is only necessary that the upper end of the lid retaining clip engage the groove in the lid and then move outwardly to the upper outer edge of the container thence downwardly to and onto the ear of an eared container.

DEFINITIONS

The following terms used in the above description are defined as follows:

Lid, a sheet metal cover of generally circular configuration and having an outer shoulder portion sized and adapted to snugly engage in a friction tight manner and seal the open end formed in a container.

Container, defined as an open-top can preferably having a side wall of circular configuration and having a bottom attached thereto with the container having either straight or tapered side walls, the container usually being made of sheet metal of six to eight thousandths of an inch in thickness.

Bail, as shown in the above-described drawings, preferably a wire bail which may be automatically or hand attached, said bail adapted to be pivotally swung within a bail ear of domed conventional construction and attached by means of a flange either by soldering or welding the flange to the side walls of the metal container.

The terms "up," "down," "top," "bottom" and similar terms are applicable to the container and lid as described in conjunction with the accompanying drawings and such terms are merely for the purpose of description and do not necessarily apply to a position in which the container and lid may be used.

The conception of the lid retaining clip as above-described and its many applications is not limited to the embodiments above-described but departures therefrom may be made within the scope of the accompanying claims and protection is sought to the broadest extent the prior art allows.

What is claimed is:

1. In a lid retaining clip for use with an eared container and in which the lid is a reusable lid having formed therein a groove as a part of a friction top closure which is sized and adapted to fit within and close the open top of the container, the clip preferably of a strip of metal and the like, the strip being formed so that when mounted on the container as a lid retaining clip it includes, (a) an upper inner end portion adapted to enter and engage the outer portion of a groove of the lid; (b) a transverse portion of determined length, said transverse portion attached to and extending outwardly from the inner end portion; (c) an outer depending portion attached to and extending downwardly from the transverse portion, the lower part of the outer depending portion disposed to lay adjacent the side of the container; (d) an aperture formed in said outer depending portion, said aperture positioned so as to engage an ear of the container when the clip is in its retaining position and by its engagement with the ear to be removably retained in position, and (e) a distal end portion formed as a part of the depending portion, said distal end being bent from the plane of the depending portion so as to provide means for grasping the clip so as to facilitate removal of the clip from the ear.

2. In a lid retaining clip as in claim 1 in which the inner end portion and outer depending portion as they leave the connecting transverse portion converge toward each other.

3. In a lid retaining clip as in claim 1 in which the inner end portion and outer depending portion are spaced, positioned and biased toward each other so that when the clip is mounted in the lid retaining position the outer wall of the lid groove is gripped by the inner end portion and the upper outer end of the container side wall is gripped by the outer depending portion.

4. In a lid retaining clip as in claim 1 in which the distal end is curved outwardly for grasping by the user of the container.

5. In a lid retaining clip as in claim 1 in which the outer depending portion includes a leg portion bent at about right angles to the transverse portion, from the leg portion a downwardly and inwardly directed leg portion continues until it is bent therefrom to form a wall portion

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adapted to lie adjacent the wall of the container and with the aperture formed in the wall portion.

6. In a lid retaining clip as in claim 5 in which said aperture is sized so as to provide a snug engaging fit on the ear of the container.

7. In a lid retaining clip as in claim 6 in which the outer depending portion has a slot formed therein, the slot extending from the aperture to and through the lower end of the depending portion, the slot of a width to freely slide by a wire bail mounted in the bail ear.

8. In a lid retaining clip as in claim 6 in which the outer depending portion has a slot formed therein, the slot extending from the aperture to and through a side edge of the depending portion, the slot at least of a width as great as the diameter of wire in a wire bail mounted in the bail ear.

9. In a lid retaining clip as in claim 6 in which the outer depending portion has a slot formed therein, the slot extending from the aperture toward and at least near to the transverse portion of the clip.

10. In a lid retaining clip as in claim 1 in which the outer depending portion includes a first leg portion disposed at about a right angle to the transverse portion; an accordion shaped leg portion extending from the first leg portion, the accordion portion extending downwardly and inwardly toward the container, and a straight leg portion extending downwardly from the accordion section, the straight leg portion adapted to lie adjacent the container side wall.

11. In a lid retaining clip as in claim 10 in which the straight leg portion contains the aperture, said aperture of a size a little larger than the diameter of the ear of the container, the aperture positioned so that when the

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aperture is brought in the way of the ear, the aperture is slightly above the ear and must be cammed onto the ear to expand the accordion section a slight amount so as to tension the mounting of the clip to the ear.

12. In a lid retaining clip as in claim 11 in which the outer depending portion has a slot formed therein, the slot extending from the aperture to and through the lower end of the depending portion, the slot of a width to freely slide by a wire bail mounted in the bail ear.

13. In a lid retaining clip as in claim 11 in which the outer depending portion has a slot formed therein, said slot extending from the aperture to and through a side edge of the depending portion, the slot at least of a width as great as the diameter of wire in a wire bail mounted in the bail ear.

14. In a lid retaining clip as in claim 13 in which the width of the slot is slightly less than the diameter of the ear, the slot disposed so as to permit the engagement of the ear by an ear sensing device.

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30 U.S. Cl. X.R.

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